END
FILMED

DTIC
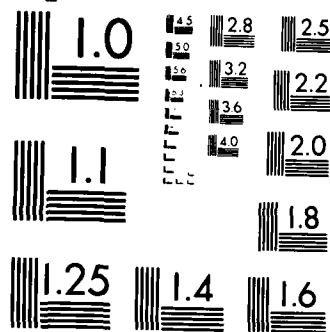
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Giving A New Focus To Resource Management

by

LTC Donald C. Prettol
Comptroller of the Army (COA)

Presented at the
19th Annual Department of Defense
Cost Analysis Symposium
Xerox Training Center
Leesburg, Virginia
September 17 - 20 1985

DTIC
ELECTE
DEC 3 1985
S   D
        B

AD-A161 840

DTIC FILE COPY

11 21 - 85 042

GIVING A NEW FOCUS TO RESOURCE MANAGEMENT

In Army resource management, we have for the past several years perpetuated a management anachronism. As we move through the Planning, Programming, Budget and Execution System (PPBES) process, we do not maintain the continuity necessary to find out how well our decisions in the earlier phases of the process actually turn out.

We have allowed this key management process to exist without any formal, systematic feedback loop--the key step necessary to evaluate the quality of our decisions and to improve the quality of our future decision making.

It is time to create such a loop, time to provide useful tools for all levels of Army managers. It can be done; however, we must refocus our efforts by modifying, improving and, in some cases, rebuilding our current management processes. But, before we can do so, we must understand the current environment, its "loopholes" and what base processes we will need to build upon.

In the planning phase of the management process, we develop The Army Plan by function. We establish our overall priorities and make decisions for the future in terms of those functions and their relationship to the overall goals of the Army's leadership for the next five and following ten years.

In the programming phase of the process, we program our resources to support specific missions and initiatives within each of the functions-- identifying first the action required to support the plan for each of the functions, then the resources necessary to accomplish these missions. In these two phases, the process proceeds from the overall function into the display of missions within each function in resources program packages known as Program Development Increment Packages (PDIPs).

When we move from programming to budgeting and execution in the PPBES process, we tradionally change our focus from the horizontal view of resources across the spectrum of approved program packages to the vertical view of resources in the strict appropriation structure. This structure will be used for the presentation of the budget to Congress and the later distribution of funds to commands and activities in the year of execution.

In the past, we have accepted the transition from horizontal to vertical resource management structures as unavoidable. We are designing a major revision to the Army Management Structure (AMS) that will, through the use of interactive components of management information, allow us to retain both horizontal ard vertical management visibility throughout all phases of the PPBES.

However, the AMS redesign will not be fully fielded to give us the management benefits that we seek until the 1990's, and we cannot afford to wait that long to establish essential feedback to our senior leadership. So, the questions facing both the Headquarters, Department of the Army

(HQDA) staff and the Major Command (MACOM) staffs are: How can we establish a programmatic, output-oriented focus in the five year defense program? And, how can we get the feedback from actual execution reported against the same programmatic elements? That is, how can we close the loop on decision making in the PPBES?

At least six steps have to be taken to close the loop in the current system:

o Establish a logical Program Package Structure that accommodates both external requirements of the program and budget process and the way that the Army does business.

o Identify and improve the program outputs in the packages. We need to define performance factors, workloads, inputs and outputs for our resource packages. We need a way to tell each other what the resources are supposed to produce for the Army.

o Expand the packages to include the full eight years of PPBES and all funds used to accomplish Army programs and activities, not just Army Total Obligational Authority (TOA).

o Rebuild the program packages to make them meaningful at all levels of Army management--from the departmental headquarters, to the major commands and down to the installation and activities that will actually execute the programs.

o Modify the program and budget development process at all management levels of the Army to retain this new focus of decision making while still being able to complete the required vertical appropriation requests to Congress.

o Ensure that a link is provided to support current functional management systems, the follow-on systems to be fielded in the 1990's, and the Assistant Chief of Staff for Information Management's (ACSIM's) initiatives to develop a corporate data base and support artificial intelligence programs.

One major effort underway to support the Resource Managers is the PRM model. This model adopts the features previously discussed and provides the Resource Managers at all levels of the Army a quick turnaround assessment for the weapon systems side of the Program Package Structure.

PER FORM 50

A-1

-2-
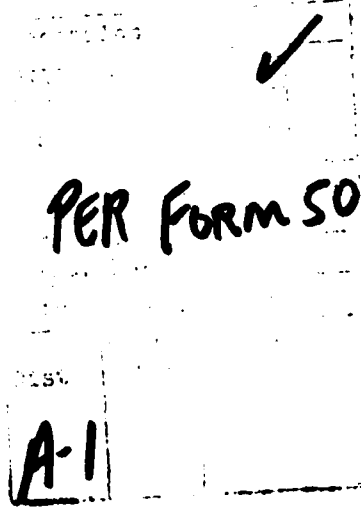
THE PROGRAM RESOURCE METHODOLOGY:

IN DIRECT SUPPORT
OF MANAGEMENT

By Lieutenant Colonel Donald C. Prettol

Managers at different organizational levels need information tailored to their needs. These needs are defined by the problems managers must solve. For instance, a Congressman may ask, "General, what happens to your program if we reduce O&M by 30 million dollars?" On the other hand, the Vice Chief of Staff's concerns may be more specific. He might need to know the cost of an entire tank battalion. A division commander may need even more specific information, such as how much money is needed to meet his training objectives.

The Comptroller of the Army (COA) is currently addressing these needs through the Program Resource Methodology (PRM). The PRM model, to be tested in July and fielded in the fall of this year, should provide all managers information for decision making on a real time basis.

The model is the result of the concern that operation and support (O&S) costs for force modernization might be larger than originally expected. Because of this concern, the Assistant Secretary of the Army for Installations, Logistics and Financial Management directed the COA to develop a methodology for resourcing materiel systems. Thus, COA formed the Program Resource Methodology Division, whose mission was to design an automated model which would assist managers in the decision-making process, while focusing on O&S costs of materiel systems.

After an intensive 18-month effort, the resulting model has been designed to be:

o Easy to use.

o Easy to update.

o Capable of interactive processing.

o Dedicated to the user's task at hand.

o Able to display information in different ways, depending on the needs of the user.

o Able to run repetitive scenarios for "what if" analysis.

o A system the user can rely on to provide accurate information.

These represent seven keys to successful implementation, which will be discussed in the remainder of the article. And, ultimately, the PRM model will be used as required during the Planning, Programing, Budgeting and Execution System (PPBES) cycle.

Keys to Successful Implementation

One key to any successful decision support system is that it be used. The PRM model is extremely user friendly. It provides the user a combination of menus and instruction screens. The user simply follows the instructions presented and is able to produce a series of reports or graphs, and run alternative and reverse solutions with minimal training. Figure 1 is an example of two menus from the model. Simply by depressing alternate function (ALT) keys, the user can assemble the data residing in permanent storage and create a series of meaningful reports to answer specific questions.

INDEX

1) Fixed system reports..Enter ALT-A
      This report shows you one system that you
      select for all MACOMs for all years.

2) Fixed MACOM reports ....Enter ALT-B
      This report shows you one MACOM that you
      select for all systems for all years.

3) Fixed year reports ....Enter ALT-C
      This report shows you one year that you
      select for all MACOMs for all systems.

4) Depot & Component Overhaul Model.........Enter ALT-D
      This model calculates depot maintenance
      and component rebuild requirements.

PRM MODEL

You have chosen to make a
fixed system report.

Enter ALT-A to begin
      processing.

Enter ALT-I to display
      index.

Enter ALT-X to exit.

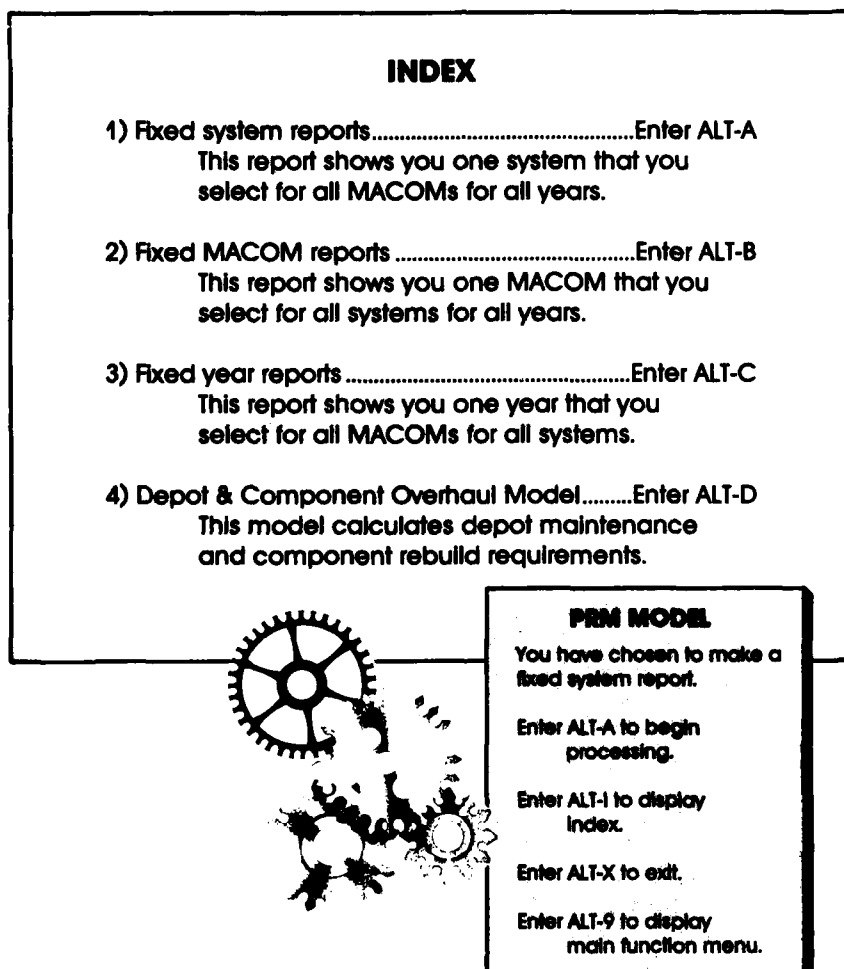Enter ALT-9 to display
      main function menu.

Figure 1

PRM data is organized into small blocks of information containing variables such as operating tempo, consumption rates and various cost components. We envision that this data will be updated prior to specific events in the PPBES, such as the Modernization Resource Information Submission (MRIS) scrub, and distributed to all users on floppy disk. As electronic communication media becomes available, updates will be provided to all users on a near real time basis. This technique will assure that all users are utilizing the same data and assumptions. In either case, the data base will not have to be manually updated. The above represents two additional keys to implementation--the model will be easy to update and capable of interactive processing.

Users of many data bases often complain, "The system is down," or "They won't run the report until Friday." Another key, then, to successful implementation is that in order to play the direct support role, the model had to be dedicated to the users and the task at hand. PRM was designed to run on IBM or IBM personal computer (PC) compatible equipment. It runs using off-the-shelf software which can be purchased in any computer store or by catalog. Data can be mailed on floppy disk, and the user can be trained in a matter of hours. Hence, the system will belong to you, the decisionmaker.

As the decisionmaker, then, please consider the following questions:

o What ammunition costs should be programmed over the Program Objective Memorandum (POM) years for the M1 Tank?

o How much Operating and Maintenance (O&M) funding should be available within the U.S. Army Forces Command (FORSCOM) to buy repair parts for its M60A3, M1, M1E1, and Bradley Fighting Vehicle systems?

Another key to the PRM model's successful implementation is its ability to manipulate data and provide a variety of useful report formats and graphs. Cost components and other data are stored in the PRM model on a series of system/major Army command (MACOM) spreadsheets. Each spread-sheet contains data for seven fiscal years. These can be combined in different ways to meet the needs of users at different levels. Figure 2 is an example of the data organization.

Since data is entered and stored in the model by specific system and MACOM over a period of seven fiscal years, it is possible to extract, aggregate and display resultant costs in a number of reporting formats. This represents yet another key to successful implementation: the ability to display information in certain ways, depending on user needs. Figure 2 displays this concept as a cube whose axes are systems, MACOMS and years. Each of the above questions can be answered by using the appropriate PRM report format. Looking again at Figure 2, fix the axis of the cube at a system. The resulting slice of data will show us the system cost by MACOM over the fiscal years. Fixing the axis at a MACOM will result in a slice of data showing MACOM costs by system and fiscal year. The final question is answered by fixing the fiscal year axis.
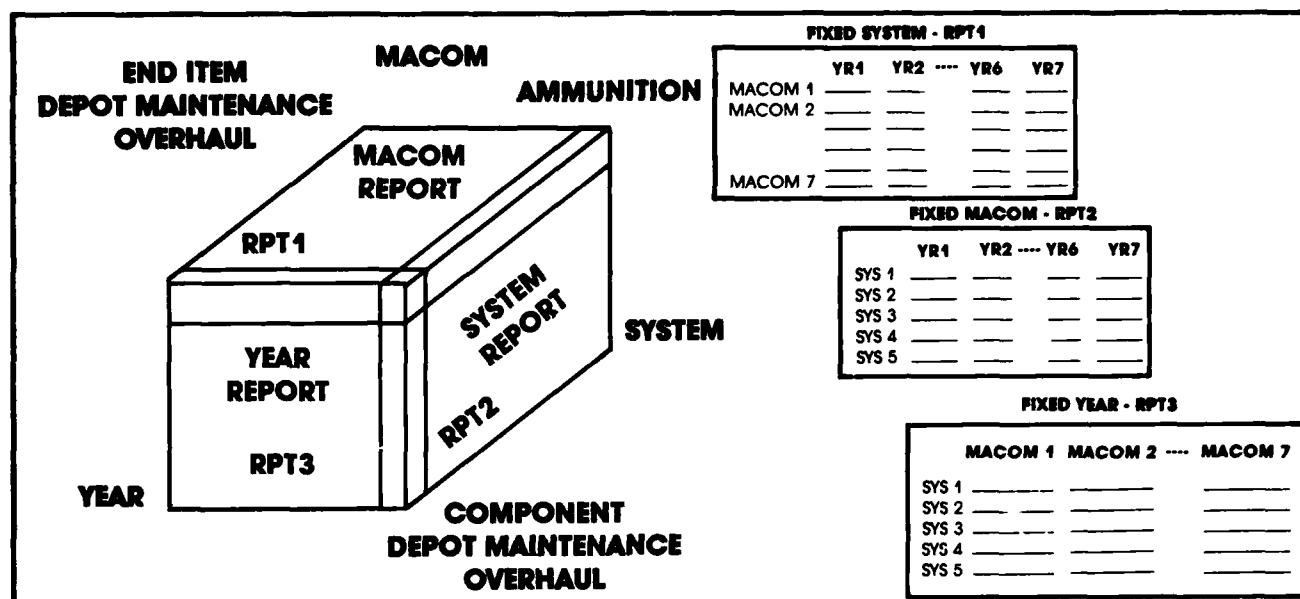
-5-

Figure 2

Providing flexibility of reporting is made possible by a technique called templating. (See Figure 3.) The technique allows compact MACOM/system spreadsheets to be stored and later merged into larger spreadsheets which provide the various reports discussed above. The user can use model menus to select proper combinations of data, and quilt them into meaningful information, tailored to their specific requirements.

The PRM implementation model is relatively large; some reports require more than 20,000 calculations. The concept was to work with smaller spreadsheets where possible and combine them as necessary to perform the desired functions. Under this concept, there are often cases where the "total" PRM spreadsheet never physically exists. The smaller, functional spreadsheets are joined together and used as necessary to calculate totals. Then, the space may be reused by another set of spreadsheets.

The spreadsheet contains the following elements:

   o <u>Input area</u>. In Figure 3, the top part of the template contains a conceptual input area. It is here that smaller system MACOM spreadsheets are consolidated as needed for specific reports.

   o <u>Working storage and submodel area</u>. Even the simplest PRM model spreadsheet performs many data manipulations and calculations. In the more complex templates, it is necessary to combine these with submodels and make additional computations.

   o <u>Results area</u>. This area is reserved for the results of the calculations and is tailored to the purpose for which the report is being made.

   o <u>Menu and Macro area</u>. Commands for the computer are stored in this area. For the most part, the user never views this section.
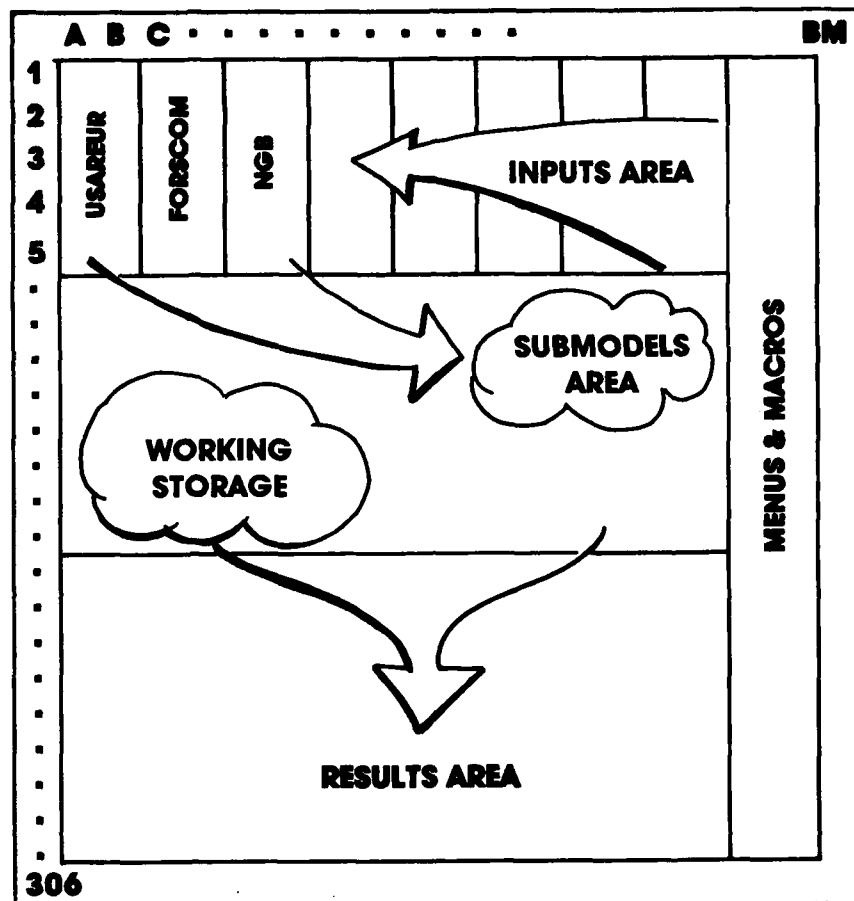
Figure 3

Comparing Decisions

So far, the model's ability to report information in a variety of useful formats has been discussed. However, decisionmakers require the capability to compare the effects of their decisions on costs. Another key to successful implementation, then, is the ability to perform "what if" analyses. Decisions regarding fielding or operating tempos, for instance, will have a dramatic effect on the O&S cost of a given materiel system.

In order to assist managers, an "alternative analyzer" was developed which allows the analyst to enter up to five scenarios or cost considerati s per iteration, calculate the results and display the output in terms of tables or charts.

-7-

Since resources are often constrained, the best strategy is sometimes not affordable, or if it was affordable in the early planning stages, later decisions which further constrain resources make the strategy unaffordable. If, for example, funding procurement spares for a given system is reduced by 10 percent, what effect will that have on operating tempo? Further, will it have any affect on Operation and Maintenance funds for that system? The usual answer to these questions is that operating tempo will be reduced (if procurement funding is the constraining resource) and some O&M funds will become available for redistribution to other requirements.

The real issue is the need to keep funding for the system in balance. The reverse solution module uses linear programing along with these types of questions. It develops the optimum way to allocate operating tempo to the major commands under total Army cost constraints.

The model is currently receiving information from the Sample Data Collection (SDC). An SDC collects consumption information for selected materiel modernization systems. Since the goal of our analysis is to convert the consumption model to a Program and Budgeting model, the relationship between consumption and replenishment must be better understood. In order to achieve this objective, the data contained in the Operating and Support Cost Management Information System (OSCMIS) will be validated for accuracy. Since OSCMIS captures data at the replenishment level, a link between the replenishment (obligation) and the consumption of resources must be understood. Once a temporal link is established, a combination of SDC and OSCMIS will provide information to the Programing and Budgeting model. We currently expect the new model to be completed and tested by July 1, 1985.

In conjunction with MACOM input, this information will be validated for use. This represents the final key for successful implementation; the system must provide accurate information. Hence, since validated, the information will then be incorporated into the model; this procedure will be followed as new and better information is developed. Moreover, additional systems will be added as data is available. The model will then be distributed to the Army staff for use in the preparation of the 87-91 POM.

The ultimate goal of managing information is to free decisionmakers from the detail of developing information. They must be provided the information they require promptly and in the format they need to assure they make the best possible decisions for the U.S. Army. The PRM is easy to use, easy to update and will be dedicated to the Manager. It will save time and provide better, faster and more accurate information on which to base decisions.

END

FILMED

1-86

DTIC